

ELECTRIC PUMP UNITS

WATER
MIST
SYSTEMS



Water mist systems driven by pumps and electric motors are one of the most demanded configurations because of its constant, completely safe and reliable operation. They protect the most delicate risks by shutting off before large water demands.

The greatest advantage of these pump systems is their capacity to protect a great variety of risk, configuring the system for the zone characteristics that need to be protected: pump selection and electric motor with adequate power.

The MAIN PUMPS provide an adequate water flow to the specific risk that is intended to protect and with a pressure that is sufficiently high for the water nozzles to operate properly.

The motor-pump unit is formed by an electric motor with enough power to operate the positive displacement pump it is connected to.

They may or may not have a PUMP JOCKEY that keeps the supply network filled with water to a certain pressure, always because of a drop in the discharge pressure between 11 and 15 bar (UAPJ type 1) or between 25 and 30 bar (UAPJ type 2).

Finally, the system has a SUCTION ACCUMULATOR, which is linked directly to the water supply system and connects to the drive pumps.

The DISCHARGE HOSES of the main and jockey pumps, as well as the anti-return valves, connect the equipment to the drive accumulator.



These systems have, as their mission, pumping the stored water in the supply and sending it at a high pressure to the distribution network. In this way, and due to its pressurisation, the water, once it reaches the nozzles, is atomized into a series of micro-drops that produce a mist that has the goal of fire extinguishing, suppression and control.

This type of pump-motor unit, with or without a pump jockey, is used in wet piping and preaction systems where closed nozzles are installed that allow the water to be kept at a certain pressure on the inside of the discharge network (wet piping systems) or in the branch considered between the pump unit and the directional valves (preaction systems).



Both the pump jockey and the main pump(s) are driven by a **CONTROL CABINET** that has an automaton to regulate its operation.

This joint has a **DRIVE ACCUMULATOR**, in which the following elements are installed:

OVERPRESSURE SAFETY VALVES:

allow for the passage of a certain amount of water when the pressure safety limit has been exceeded, lowering it to the value considered normal.

PRESSURE TRANSMITTER:

continuously measures pressure and sends an electrical signal to the control panel automaton.

PRESSURE GAUGE:

provides continuous measurement of the pressure in the drive accumulator.

BALL VALVES: are installed at both ends of the accumulator. One of them is used to isolate the accumulator from the piping distribution network and is normally open. The other is used to perform operational tests and is normally closed.



RG SYSTEMS UAP water mist pump units are activated both automatically and manually. Also, these systems have sufficient capacity (as far as flow and pressure) to fulfil the requirements established in the calculation of the agent amount.

These pump units, given that they can generate overpressure, have safety relief valves that prevent excessive peaks, protecting both the pump unit and the system from damages. In this way, an increase in working pressure from any of the components that come into contact with water is avoided. The safety valve allows water flow pressure to maintain constant pressure from the pump system, allowing the system to maintain working pressure. The flow of water that passes through the safety valve should not be directed toward the pump's suction line with the goal of avoiding heating up the water, and therefore the flow is returned to the upper part of the tank.

The pump units are equipped with a test valve that allows the water flow and resulting pressure to be tested by performing tests on the system as indicated in CEN/ TS14972:2011 in sections 8.9.8.1 and 8.9.2.6.

All of the pump system valves that could affect the proper operation of the system send a signal of their position (open/closed) to the control panel.

The discharge accumulator for the pump group has a manometer that continuously measures pressure at this point. Also, there is a pressure transducer in this same accumulator, which measures and sends the measurement of pressure in this point to the pump unit control panel.

The motor-pump unit comprises an electric motor and a positive displacement pump in which the flow supplied is a function of the number of revolutions input from the motor and its displacement and they are based on the start of the axial piston, in this way facilitating a compact design that makes these systems able to be installed in almost any area.

To reduce the number of movable pieces to a minimum, there is a motor coupled directly with each pump. Gears aren't used.

The pumps used in RG Systems water mist systems are positive displacement pumps, operating both automatically and manually, and they have a sufficient capacity

to fulfil the system's supply requirements determined by the design parameters of the nozzles used in the water mist system.

The positive displacement pumps are axial piston pumps, so the flow and pressure characteristics are different than those of centrifugal pumps. As opposed to centrifugal pumps, the flow from a positive displacement pump does not depend on the pressure of the upstream system since it is proportional to the pump speed.



The electric pump units can be used in systems of the following models:

UAP38	UAP230J
UAP46	UAP280J
UAP90	UAP345J
UAP100	UAP420J
UAP115	UAP460J
UAP140	UAP560J
UAP180	UAP575J
UAP230	UAP690J
UAP38J	UAP700J
UAP46J	UAP805J
UAP90J	UAP840J
UAP100J	UAP980J
UAP115J	UAP1120J
UAP140J	UAP1540J
UAP180J	

RG Systems electric pump units are designed to satisfy a wide range of requirements, from 20 litres per minute up to 1000 lmp, including all the intermediate stages that the risk that needs to be protected demands, with which the performance of the system can be adapted optimally to the specific needs of the job.



The electrical control cabinets for the electric pump systems are all IP54 and can have a wye-triangle starter, static starter or frequency inverter. The control and manoeuvre panel is formed of a programmable automaton and pressure measurement instruments, which allows for the progressive start-up of the pumps, adjusting the demand for each risk, thus avoiding unnecessary water and energy consumption. This PLC control equipment is cutting-edge technology and can be easily connected to any fire alarm and detection system.

Summary of benefits of electric pump groups:

THEY PROTECT AGAINST A LARGE VARIETY OF HAZARDS.

THEY USE ELECTRIC MOTORS AND POSITIVE
DISPLACEMENT PUMPS.

THE ELECTRIC MOTOR COVERS MORE THAN ENOUGH NEEDS
FOR THE PUMP, PROVIDING OPTIMUM CONDITIONS FOR THE
OPERATION OF THE NOZZLES.

THEY ARE DESIGNED TO SATISFY FLOWS FROM 20 LPM TO
MORE THAN 1000 LPM.

IP54 ELECTRICAL CABINETS WITH FOUR-PHASE WYE-TRIANGLE
STARTER, STATIC STARTER OR FREQUENCY INVERTER.

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